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Educational Methodology in Social Sciences

INTRODUCTION

The Social Studies of the 1960's have provided excitement and challenge to the people involved in the development of new ideas and materials for classroom use. Specialists have been searching for more relevant content from the Social Sciences and for better ways of teaching this content. As a result, programs have been developed that reflect the concerns of social scientists more accurately.

In the past decade there has also been an increasing emphasis on the problem solving process. Research has been done on children's thinking processes (e.g., Taba, Sigel), and materials have been developed using logical sequences that begin with simplistic concepts—explore and broaden these concepts—and, finally, use the same concepts in relation to others to build general statements. Much additional research is needed to determine the effectiveness of the materials that exist, and to generate creative variations for dealing with present materials.

There has also been a deepening concern with the social problems of our age (e.g. racial tension, economically disadvantaged, and student revolt); Social Studies specialists have become involved in the investigation of values and attitudes as they related to the current social scene. Leppitt and Fox, and Shaftel have done research dealing with open-ended problem stories and children's solutions of them. Materials have been published that provide stories and suggestions for conducting the role-playing sessions. Further effects of the role playing technique and materials are explored in two articles in this journal.

A giant step has been taken in making Social Studies more relevant for children. A number of umbrella steps, scissors steps, and giant steps, remain for the 70's.

The Relationship of Role-Playing to Futuristic Thinking

Martha A. John

Boston University

The Problem

As children reach the formal-operations level of thinking, they become more able to anticipate the consequences of their behavior; this cognitive process is sometimes called antecedent/consequent thinking. One way to classify consequences is in terms of the time involved in the development of the consequences; for example, (1) short-range or immediate effects of an antecedent and (2) long-range consequences. A child's ability to determine the long-range consequences might be termed futuristic thinking. The problem investigated and reported in this paper is the following: Does a child who has participated in role-playing sessions become more futuristic, that is, more able to determine long-range consequences, than a child who has not participated in role-playing sessions?

Related Research

According to Piaget, there are several indications that a child is in transition between the concrete-operations stage of thinking and the more sophisticated formal-operations level of thinking. One such indicator is the child's ability to transcend time and space via a symbolic representation, possibly verbal symbolism. He sees the hypothetical consequences of a proposed solution and he can suggest alternate solutions. The child goes beyond the time and space barriers and solves problems intellectually. Usually this occurs during adolescence and the youth delights in considering "that which is not". He has become interested in reasoning in a hypothetico-deductive manner. For example, a boy and his friends are faced with the problem of repairing a damaged boat so they can use it for a clubhouse. The boy knows that they must first obtain money to pay for repairing the boat and that they can either ask their parents for the money or find jobs to earn it. He also knows that once the money is obtained, they will have

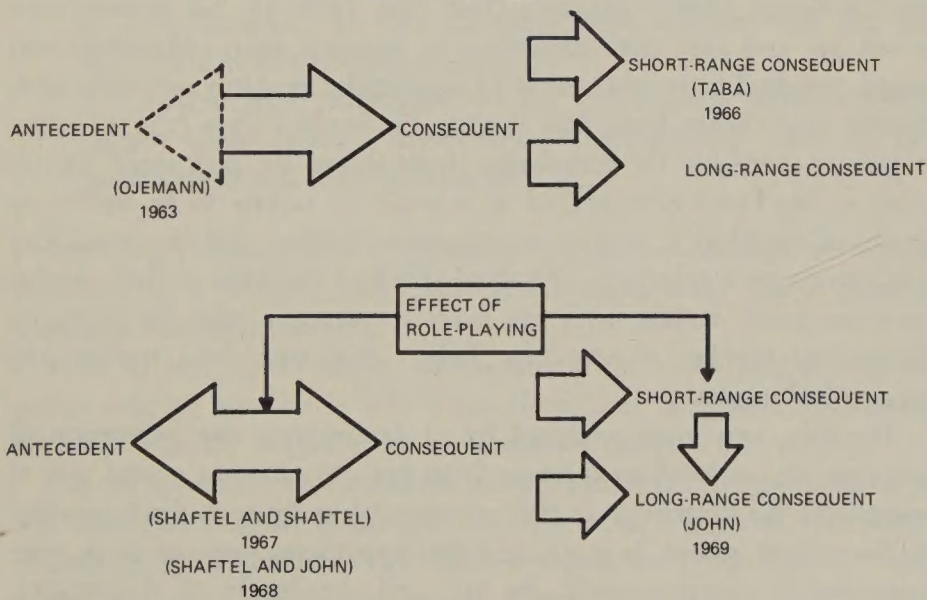
to pay to have the boat repaired. The child has engaged in what is called antecedent/consequent thinking.

Several investigators have studied different aspects of antecedent/consequent thinking and the relationship of these investigations is shown in Figure 1. Most of the researchers recognize several aspects of the thinking task, but they generally emphasize the one indicated. The following paragraphs elaborate briefly on the research investigations indicated in Figure 1.

Causal Thinking—Although the example given of antecedent/consequent thinking dealt with a child's ability to foresee the consequences of certain antecedents, one might also ask the child to reverse that process and determine the antecedents that would have produced certain consequences. Ralph Ojemann (1963) has termed this "causal thinking", that is, the child looks at an event and projects backward in time to determine the cause, or causes that might have brought about the event. Ojemann's studies of elementary school children have centered about the idea that certain similar behaviors or events may have developed from different causal bases or a multiplicity of causal bases.

Short- and Long-Range Consequences—In going from an antecedent to a consequence it is possible to distinguish between short-range and long-range consequences. Taba (1966) has done this in her development of "Causality Codes" for classroom discussions. Although her terminology is similar to Ojemann's, she is actually concerned with (1) the short-range or immediate effects of an antecedent (which she calls a focus event) and (2) the long-range consequences of the focus event. For example, if a child is asked "What will happen next?" An

FIGURE 1.
Related Research



immediate effects answer might be—"He will trip over the log". An example of a long-range answer might be, "After he falls over the log, he will call for help—maybe for hours". A study of this latter kind of long-range consequential thinking could be described as a study of futuristic thinking.

Role-Playing and Antecedent/Consequent Thinking

In their book *Role Playing for Social Values*, Shaftel and Shaftel (1967) point out that one of the products of role-playing is an increased utilization of antecedent/consequent thinking. The book also provides a description of the role-playing technique and a number of open-ended social problem stories that could be used to stimulate thinking and involvement in the upper elementary classroom.

To explore the products of role-playing sessions, including the Antecedent/Consequent variable, in a systematic fashion, Shaftel and John¹ (1969) conducted a study in which the following hypotheses were tested: Compared with non-participants, children who participate in role-playing sessions will 1) be more able to identify the main problem in a complex story, 2) be more able to determine antecedent/consequent relationships in the story, 3) be able to propose quantitatively more solutions to the problem posed in the story and 4) evidence more concern for the feelings of other persons involved in the story.

Using stories and the technique described by Shaftel and Shaftel (1967), eight role-playing sessions were conducted at one-week intervals with 6th grade children. Two experimental classrooms and one active control (creative writing session) participated in the experiment. The children involved came from upper middle-class homes. The groups were roughly equated in range and mean IQ scores as measured by the California Mental Maturity Test (See Table 1). All groups were given pre and post tests consisting of sentence stem completion and taped, standard interviews based on open-ended problem story stimulus. Stories were chosen from *Role Playing for Social Values* (1967). Figure 2 gives a sample of the completion items chosen for each story. Stories used as test bases were judged by a panel of experts to be similar in terms of complexity, number of solutions possible, and the possibility for sensitivity in solutions. The taped standard interview utilized similar question bases dealing with the main character, a peer, an authority figure and number of solutions. Judges evaluated these written and transcribed results.

The data were then analyzed by 1) determining the proportion of subjects who showed an increase from pre-, to post-test scores and 2) comparing the proportion in the experimental group with the proportion in the control groups. It was found that hypotheses two and three were supported at approximately the .10 and .05 levels of significance,

respectively; the exact significance levels were .06 and .04. It was concluded that children who participated in the role-playing sessions did see more antecedent/consequent relationships and proposed significantly more solutions to the problems. Hypotheses one and four dealing with the identification of the main problem and sensitivity to the feelings of others, respectively were not supported at a level of statistical significance.

The experimental data just delineated dealt with a limited sample of middle-class, 6th grade children and considerably more investigation needs to be done before the findings can be broadly generalized. However, the research cited did indicate that with this particular sample, active involvement in the role-playing in which children dealt with problems in a hypothetical way did help children become more aware of the consequences of various solutions.

Data Collection and Analysis

Role-Playing and Futuristic Thinking—During the interviews conducted as part of the role-playing experiment described in the previous section, the interviewer observed that some of the children's responses dealt with the immediate (short-range) effects and other responses dealt with the long-range sequence of events in problem-solving. Moreover, some of the responses were concrete while others were abstract in nature. Whether the role-playing sessions affected 1) a child's futuristic thinking or 2) the abstraction of his responses was not determined. Consequently, the data collected during the role-playing sessions were re-examined to see if the following hypotheses were valid:

- 1) Children who participated in the role-playing sessions would be more futuristic in their thinking than children who did not participate in role-playing sessions and
- 2) Children who participated in the role-playing sessions would suggest more abstract consequences than children who did not participate in role-playing sessions.

Since all children were required to propose a solution or several solutions to a problem, there was ample opportunity for a child to engage in futuristic thinking.

Prior to scoring the children's responses, the three judges attended group training sessions in which sample phrases were analyzed jointly by the judges. The judges scored the coded pre and post interviews.

The judges classified statements made in the interviews according to the time frame (short range (P_y) or long range (P_z)) and abstraction [abstract (A) or concrete (C)]. Table 2 shows the percentage of statements for which the judges agreed; that is two out of three judges

TABLE 1.
IQ Scores

	<i>Mean</i>	<i>Range</i>
Experimental Group I	121	101-136
Experimental Group II	114	96-140
Control Group	116	98-148

FIGURE 2.
Sentence Stem Completion

1. Tommy said
2. If Tommy
3. The boat (object in story)
4. The owner of the wallet
5. The main problem in this story is
6. The problem could have been avoided if
7. Eddie feels (peer)
8. Eddie's uncle (adult authority figure)
9. Some different ways the problem might be solved are
.....

classified a statement as P_y or two of the judges classified it as P_z and similarly for A and C statements.

TABLE 2.
Judgmental Agreement

<i>Judges</i>	<i>Response Classification</i>	
	<i>Time</i>	<i>Abstraction</i>
1 & 2	85%	81%
1 & 3	84%	79%
2 & 3	83%	74%

A majority rule was used to classify the responses; that is, each student response was classified in the category in which two or more judges placed it. To determine the changes that occurred after the experimental groups participated in role-playing sessions, the number of transitions from one category to another were counted. For example, a student who received a P_y on the pre-test could go to P_z on the post test and a student receiving a P_z on the pre-test could make a transition to P_y on the post test. If the experimental group differed from the control group in the percentage of transitions from P_y to P_z (short-range to long-range) we would conclude that there tended to a change in the futuristic thinking. Similar statements can be made about transitions from the concrete to abstract (C to A).

Table 3 shows the transitions for the responses in the experimental and control groups.

TABLE 3.
Number of Pre-, to Post-Test Transitions

Group	P	P	P	P	A	C	C	A
	y	z	z	y				
Experimental		31		13		24		23
Control		8		11		18		14

The percentage of transitions from P_y to P_z in the experimental groups was compared with the percentage of the same transition in the control group. Similarly, transitions from P_z to P_y were compared, as well as A and C transitions. Comparisons were made by using a normal approximation to the fraction of transitions in the various classes and testing for significant differences between the normal variates.² The results of the analysis are shown in Table 4.

TABLE 4.
Comparison Between Transition Percentages

Transitions	Value of standardized normal variate	Conclusion
P_y to P_z	3.49**	Significantly greater percentage of responses in the experimental group changed from P_y to P_z
P_z to P_y	2.03*	Significantly smaller percentage of responses in the experimental group changed from P_z to P_y
A to C	1.08	
C to A	1.03	There were no significant differences between experimental and control groups in transitions from A or C to other responses.

** Significant at the .01 level

* Significant at the .05 level

Findings

Based on the analysis above, it is clear that the children who participated in role-playing sessions did show significantly more change in their range of futuristic thinking. Hypothesis I is supported at the .01 level of significance. They became more long range in their thinking but they did not show a similar transition from concrete to

abstract thinking. Hypothesis II was not supported at an acceptable level of significance.

Implications for Practice

One might infer from the findings of this research that a child is more apt to be able to solve complex problems in which one kind of act may provide the stimulus for a chain reaction, and that he is also more likely to see these possibilities in advance if he actively participates in solutions of hypothetical problems. Since this would seem to be a desirable skill, it might suggest that the social science curriculum provide more opportunities for hypothetical/deductive thinking and more situations in which the child could be actively involved in such problem solving. Role-playing obviously provides an opportunity for such thinking and involvement. To be most useful, however, it seems that several solutions might be enacted in which one builds on the consequences of the preceding solution. This would provide the best opportunity for practice in long-range thinking. Having practiced such solutions in mock situations in school, the child might more readily transfer this approach to real-life problem situations.

NOTES

1. The study was conducted at Stanford Research & Development Center under a grant from the USOE and the results are being published by the Stanford R & D Center.
2. The normal approximation was used rather than the Fisher exact test because the expected frequencies of transitions are relatively large, see K. A. Brownlee, *Statistical Theory and Methodology in Science and Engineering*, John Wiley and Sons, 1961, pages 121-123.

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The Relationship of Role-Playing and Futuristic Thinking With Ninth Graders

MASTER'S THESIS, 1969

Claire E. Austin

The Problem

Perhaps the most important as well as challenging role of education today is to equip students with the ability to deal successfully with a rapidly changing world and the unknown future. It is no longer possible for educators to ascertain the world with which its students must cope. Situations, conflicts and problems of today may be passe or obsolete when the student faces the world as an adult. One of the tools which education can provide for the student is the ability to solve problems regardless of their nature. The student must learn to approach his world of change and decision making not only without fear, but with self-confidence and enthusiasm.

Problem solving can best be taught by practice in solving problems. This research investigates role playing as a technique in teaching ninth grade students how to deal effectively with problems.

Background Research

Life is a series of confrontations with oneself, with other people, and with one's environment. There are therefore limitless problems to be dealt with. The person who can deal with these problems successfully and can face them with self-confidence can be a happier person as well as an asset to society. Using a method you have seen performed successfully is reassuring when confronting a problem. This security is lost when one recognizes a new problem for which there is no precedence of behavior. Problems of urbanization and nuclear warfare are new problems government officials face today for which there is no precedence. The expanding role of the federal government, programs of welfare, educational programs such as Head Start and METCO are all new concepts being tried out to confront new problems. Certainly then edu-

cation has an obligation to outfit the citizen of tomorrow with the tools to face new dilemmas more effectively for himself and for his society.

The technological age and newly emerging urban world depends for its success on human relations. Obscure villages and metropolitan centers meet today. There is, therefore, a need for commitment to the solutions of the problems of mankind. Change and ensuing problems will become the dominant theme of most of the world. Technology already challenges our basic concepts of world and of man's sense of identity. Problems of leisure are lurking. The individual's self concept throughout the world has been challenged since the era called the "post war world". The breakdown of tribalism may occur in Africa but the repercussions reach America and will continue to do so at an increasing intensity.

Part of the problem solving must be awareness of the effects on others—sensitivity to others' feelings. A problem story can be a model in which a student tries out his solutions and hears the comments of his peers. How a child interacts with others is determined by his feelings towards others, his perceptions of their behavior toward him and his own feelings about himself derived from these perceptions. To recognize the meaning of others' behavior he must be able to put himself in the other's place. From having played another's role he may become more aware of his own role. With this knowledge he may be able to effect changes in his own role and to improve his social interaction.

Ralph Ojemann has developed a curriculum for the greater Cleveland school system in social studies based on a "causal" approach by which students are trained to consider the alternatives and their probable effects.

Inhelder and Piaget through experimental research suggest that adolescents can develop futuristic thinking, think of alternative possibilities and see the problem and its proposed solutions or hypotheses in relation to other events and effects. They suggest that adolescents want to solve problems that they have schemes for reform which means they can deal with change. But Piaget also suggests an adolescent is egocentric and therefore his solutions or thinking will be narrow and self centered.

Role playing has been tried experimentally with sixth graders by Shaftel and John. In their research two hypotheses: role playing may help children identify the antecedent/consequent relationships in a problem solution and role playing may help children develop more solutions to the problem were supported at the .01 and .05 level of statistical significance respectively (Shaftel, Fannie R., and John, Martha A., *An Investigation of Role Playing in Classroom Settings and Some Variables Related to it*; publication in process, p. 4).

Hypotheses

Children who participate in a series of role playing sessions will learn to perform better in the following ways than children who do not have these sessions:

- 1) The solutions they propose to problems will be more realistic.
- 2) They will propose more solutions to a problem.
- 3) They will describe long range effects of the solutions.
- 4) They will become more sensitive to the feelings of others.

Design

The researcher worked with one experimental group and one control group of ninth graders in a suburban, middle class community. The two groups were comparable: coeducational, heterogeneously grouped, predominately Caucasian, English speaking with parents who were white collar workers. The researcher was the regular teacher of both groups and conducted the role playing sessions in the experimental group.

As Table 1 shows, both groups had a pre test and a post test. The experimental group had 8 role playing sessions, while the active control group had 8 map-making sessions.

TABLE 1.

experim. group	pre test	8 role ply. sess.	post test
control group	pre test	8 map mak. sess.	post test

Design Schema*

Analysis

Hypothesis one (Children who participate in role playing sessions will propose solutions that are more realistic to problems than children who do not participate in these sessions) was not supported at a level of statistical significance. There was probably little change in the variable of realistic-unrealistic thinking because so many students in each group pre tested realistic solutions. (In the control group 12 out of 16 and in the experimental group 14 out of 17 pre-tested realistic solutions).

Hypothesis two (Children who participate in role playing sessions will think of more solutions to a problem than children who do not have these sessions) was supported at the .05 level of statistical significance (Fisher Exact Probability test). Table 2 shows the transitions in number of solutions suggested from 0/1-M (more than 1) in terms of increase and decrease. Four out of 6 possibilities improved in the experimental group, while the 2 possibilities of the control group lost ground.

TABLE 2.

Group	Increase		Decrease	
	o/1-M,	M-M	M-o/1, o-o, o-1, 1-1, 1-o	
Control	o	7	7	2
Exper.	4	7	4	2

Problem Solutions

Hypothesis three (Children who participate in role playing sessions will think of more long range effects than children who do not have these sessions) was supported at the .05 level of statistical significance (Fisher Exact Probability test). Table 3 shows that out of 12 possibilities no one in the control group moved from short range solutions to long range solutions while 4 people out of 11 possibilities in the experimental group moved to long range solutions. In addition in the control group 4 out of 4 possibilities dropped to short range solutions, while only 1 out of 6 in the experimental group dropped.

TABLE 3.

Group	Increase		Decrease	
	S-L,	L-L	L-S,	S-S
Control	o	o	4	12
Experim.	4	5	1	7

Short-Long Range Thinking

Hypothesis four (Children who participate in role playing sessions will become more sensitive to the feelings of others than children who do not have these sessions), was supported at the .10 level of statistical significance (Fisher Exact Probability test).

Procedure

Experimental Group

One day each week for eight weeks role playing sessions were conducted with the experimental group. The teacher read a story from the book *Role Playing For Social Values* by Fannie and George Shaftel. Suggestions for conducting role playing sessions in the same book were followed. Each session lasted 45 minutes. The group was told their comments were confidential and that they would not be marked on anything they did or said during the session. After each story the teacher asked for solutions. Some of the solutions were enacted by the students.

Suggested solutions came forth more and more rapidly as the number of role playing sessions increased. Never at any time was it

difficult to get verbal solutions from the group. On the other hand it was always difficult to get students to participate in role playing. At the first session the students not only refused absolutely to volunteer but in many cases refused also to enact solutions. By the second session students were showing some reluctance to offer solutions for fear of having to act them out. One boy during the third session said he wouldn't offer any more solutions because he didn't want to role play but he couldn't refrain and was one of the most outspoken. By the third session the researcher simply appointed people to role play. By the fifth session students began slowly to volunteer and appointed people enacted willingly.

It would seem then that 14 or 15 year olds are embarrassed to role play and really do not enjoy dramatic acting as younger children might. Young adolescence is obviously a time of self-consciousness hence students are inhibited, although they are eager to verbalize.

The attitude of the class toward the role playing days became very favorable. Although Wednesday was the designated role playing day students asked each Wednesday to verify it. Their reaction was very enthusiastic. Several times they asked to continue the session to another day.

During the role playing sessions several characteristics became apparent. In several enactments and verbal solutions a disregard for others' feelings was displayed. When asked how the person might feel as a result of this treatment all agreed that the person in the story would be hurt. Therefore these adolescents were aware of others' feelings but not necessarily willing to act in a sensitive way.

Another dominant characteristic of the group's behavior was their insistence on a solution in the book. They were reluctant to accept the fact that the book offered no solutions. The open ended story upset them and they even suggested that the teacher was either fooling them or just hadn't "found" the solutions.

The role playing sessions became increasingly different from the regular history class sessions. They were livelier in that more students participated more enthusiastically.

Control Group

Both the experimental and the control groups were given the same pre test and post test. Each consisted of a story read from the Shaftel book. Afterwards, without discussion, they wrote answers to questions such as "What will Tommy do now?" and "Is there some other way this problem might be solved?"

The control group was given a series of map making sessions on the same day that the experimental group had role playing sessions. Some-

what of the same atmosphere as was present in the experimental classroom was attempted by non-grading, allowing talking and movement. These students also asked to continue their sessions to other days and seemed to enjoy the break from routine history classes.

Data Collection

Three judges read four sets of tests and scored each test. (Two sets of pre tests and 2 sets of post tests). There were 4 variables to score on each student's paper. These were:

- 1) short range vs long range solutions
- 2) realistic vs unrealistic solutions
- 3) number of solutions offered (none, one, more than one)
- 4) sensitivity to others (high, low, negative)

Judgmental agreement was used in that if two judges scored a student one way the student was categorized as such. Then each student obtained a general rating for each of 4 variables on both pre and post-tests.

Conclusions

This research would appear to show that:

- 1) Ninth graders have already developed realistic solutions to problems
- 2) Role playing can teach ninth graders to think of more solutions to problems
- 3) Role playing can aid ninth graders to think in a long range manner—that is, futuristic thinking
- 4) Role playing can help ninth graders develop sensitivity to others.

Discussion

The research project embodied several limitations. The groups tested were too small to tell realistically if role playing was producing the desired results. The factor of judging posed another problem. What factors are desirable in a judge is questionable. The human factor of experiences and values can not be eliminated but it might be controlled by more training sessions. However the terms such as "realistic, unrealistic, long range" etc. were difficult to specifically define and remained somewhat ambiguous and subjective.

Of interest to future researchers might be an attempt to measure the same variable with regard to internalization of them. Often students do not internalize principles they espouse.

Certainly in the area of social studies which must deal with social values and problem-solving devices, role playing can be a helpful tool

to ninth grade teachers. It is easy to implement in the classroom and is enjoyable for the students.

APPENDIX I.

Ratio of Transitions to Potential

<i>Variables</i>	<i>Increase/Potential</i>		<i>Decrease/Potential</i>	
	<i>Exper.</i>	<i>Cont.</i>	<i>Exper.</i>	<i>Cont.</i>
Realistic Solutions	1/1	1/1	2/16	3/15
Multiple Solutions	4/6	0/2	4/11	7/14
Long range Solution	4/11	0/12	1/6	4/4
Sensitivity	3/10	0/10	6/15	9/16
Total	12/28 (42.8%)	1/25 (4.%)	13/48 (25.2%)	23/49 (46.9%)

The Generalizing Process: A Methodology Examined

Martha A. John

Boston University

The Problem

A diversity of Social Science content and a multiplicity of examples for each topic are characteristics of the Social Studies curriculum. Such complexity imposes a heavy burden on the student who seeks to organize and understand a body of information. One method for "boiling down" this bulk of information is the generalizing process. Students are frequently asked to summarize their research efforts, but the process of producing general statements is frequently unexplored, and tools for critically examining general statements are not provided. Children can study Social Studies more effectively if they learn to organize their research findings and produce good general statements. It would be possible to examine two alternative ways of dealing with the production of generalizations to determine which one is the more effective technique. The research described here is an attempt to compare two different techniques for producing general statements.

Related Research

Generalizing Process

The initial step in the process of developing general statements is the formation of clear concepts. Vygotsky (1962) says one forms the idea that a group of things possess certain "common attributes." Sigel (1964) calls this "a central tendency." Having distinguished this attribute, one will give the members of this group a common label or category.

Having established a category or a broad kind of concept, one can proceed to differentiate and find similarities between these concepts. If the student is then able to see how one concept relates to other concepts in a particular situation, he has reached the level of generalizing. ". . . it is easy to see the relation between a concept and some particular instance as one of abstracting or generalizing . . ." (Reitman, Walter R., 1966, p. 100). Gagné (1965) sees the generalization as the relation-

ship between two or more concepts. It is clear that if the generalization depends on relating two or more concepts, the clarity and relevance of the concepts with which it is built is important, and the way in which these concepts are related in the general statement is equally important. It would be of considerable interest to determine an effective generalizing methodology for use in the classroom so that students could be aided in producing good general statements based on the research they had done.

Pupil Involvement

Psychologists (Peel, Sigel, Vygotsky, and others) tell us that thinking is dependent upon the kind of stimulation the child receives. Concepts emerge in the active solution of problems. They are not acquired by rote memorization, but rather by strenuous mental activity on the part of the child. If we are to help the child develop clear, useable concepts, we must help him identify challenging, interesting problems that will involve him mentally.

Some common techniques for encouraging participation and involvement are: a) peer-evaluated practice sessions, b) collective research with peers, c) gaming and competition. In peer-evaluated practice sessions, small groups of children report or discuss a contribution with each other before presenting the material to a larger group. This contribution is critiqued and possibly improved before the final presentation. C. W. Taylor says, "When peer-evaluated practice is used, creative evaluation (constructive possibilities) rather than critical evaluation (defects) tends to be more effective in producing originality, elaboration . . . etc." (Taylor, 1964, p. 105). It is possible for the teacher to encourage creative evaluation by requesting a cooperative "best product" as a result of the practice session, rather than a single "best product."

Another technique for encouraging participation and pupil involvement is collective research with peers. Social psychologists (Krech, Crutchfield and Ballachey, 1963) tell us that one of the reasons for group research is to increase participation and to increase productivity in terms of research findings.

A third technique is gaming and competition. Taylor says, "Competition in grades one to six increases fluency, flexibility and originality in creative thinking tasks." (Taylor, C. W., 1964, p. 105) We will assume here that the author is indicating a mild kind of competition since there is some evidence that intense competition may create mental blocks for some people. This mild competition might be achieved by having the final product a combination of a number of the suggestions in the group and a final "best product" dealing with a particular topic.

Rationale and Experimental Hypotheses

The related research cited in the previous section indicates that the ability to form generalizations may be improved through active participation by the child; the research also indicates that active participation is stimulated by 1) peer-evaluated practice sessions, 2) collective or group research by peers, and 3) gaming and competition. Consequently, a classroom technique which incorporates these methods of increasing active participation should aid the child in producing quantitatively and qualitatively better general statements.

On the basis of this rationale several experimental hypotheses were formed; for convenience in stating the hypotheses the classroom technique which incorporates the three methods of increasing active participation will be referred to as the Experimental Technique. (See Experimental Procedure for a complete description of the technique.)-

Hypothesis 1: Classes in which the Experimental Technique is used will show a greater increase in fluency, flexibility, and originality than classes that do not use the Experimental Technique.

Hypothesis 2: Classes in which the Experimental Technique is used will indicate an increased preference for Social Studies.

Hypothesis 3: Classes in which the Experimental Technique is used will find Social Studies easier than classes which do not use the Experimental Technique.

Hypothesis 4: Classes in which the Experimental Technique is used will be able to state quantitatively more criteria for a good general statement than classes which do not use the Experimental Technique.

Research Design

An experiment was conducted to test these hypotheses using fourth and fifth grade students. There was an Experimental Group, an Active Control Group, a New Teacher Control Group, and a Passive Control Group in each grade. The Experimental Groups and the Active Control Groups participated in training sessions dealing with concept formation and the generalizing process. Both groups were familiar with the Experimental Technique and the Standard Technique (used by the Active Control Group). This, of course, involves the possibility of methodological impurity. However, each teacher was given a precise description of the method he was to follow, and an effort was made by the teachers to use only the prescribed method.

The teachers in the New Teacher Control Group and the Passive Control Group did not participate in the training sessions. However, the new Teacher Control Group was in the same school as the Experimental and Active Control Groups, and there may have been some interaction between teachers of the groups on an informal basis. The Passive Control Groups were at a different school.

Each of the eight groups (four in each of two grades) was given 1) a Torrance Test for Creative Thinking (Verbal Form), and 2) Subject Preference Tests before and after the experiment.

A brief free response test was also administered by a trained person to all groups, after the experiment was concluded. In this post test students were asked the following: "If you are given two statements about Antarctica, how would you decide which one is the better statement? List the things you would think about as you decide."

Experimental Sample

The children selected for the Experimental Groups, the Active Control Groups, and the New Teacher Control Groups were fourth and fifth graders from the Coffin Elementary School in Brunswick, Maine. The Passive Control Groups were selected from the Elementary Schools in Auburn, Maine, where the teachers had not been given a special training program. The groups were as nearly matched as possible in terms of IQ mean and range and Social Studies achievement.

The Passive Control Groups were selected from socio-economic backgrounds similar to the Experimental Groups. Hodges' strata system (Education and Society, 1963) was used and a number assigned to the categories listed. The system was the one described in a study by John (Stanford University, Thesis, 1966). The majority of children in all groups was lower-middle class or generally from homes of blue collar workers in terms of economic level.

Experimental Procedure

Two techniques for training children to produce general statements were used in this research. The Experimental Technique is based on a method developed by Donna LaPierre of the Coffin Elementary School in Brunswick, Maine, and the Standard Technique was based on methods suggested by H. Taba in the Curriculum Development Research Project, at San Francisco State College. For a description of the Experimental Technique see *The Brunswick Program*, "Product Evaluation" in this issue of the *Journal of Education*. A brief description of the Standard Technique will be included here.

Standard Technique

The students in small groups did research on several categories, and

their findings were recorded on a large retrieval chart. Finalizing the research, 1) the teacher asks the pupils what they can say about each column or category on the chart. A number of students respond verbally to this inquiry, and after each column has been examined independently, 2) the teacher asks the students what they can say about the whole chart. Again a number of responses are sought from the class.

In the Experimental and Standard Technique Groups the techniques described were utilized three times following research collection in each of the groups. Post tests were administered following this. The New Teacher Control Groups taught Social Studies using multi media and the same general topics, but the generalizing techniques were not used. Times between testing was kept constant for all groups. The Passive Control Groups were tested using the same time interval, but training, use of media, and content emphasis were not held constant.

Data Analysis

To test Hypothesis 1, which deals with changes in fluency, flexibility and originality, the Torrance Test of Creative Thinking, Verbal Test was given to all the groups. Booklet A was used as the pre-test and Booklet B was used as the post-test. The students' scores were converted to T-scores, as suggested in the guide book for the Torrance Tests and the difference between the T-scores (After minus Before) was used as a measure of the change in each category (fluency, flexibility and originality).

An analysis of variance was used to determine whether the differences between the groups were significant. Table 1 is a summary of results of the analysis; it indicates that in every case the four groups (Experimental, New Teacher Control, Active Control, Passive Control) differed significantly at the .10 level or less. To determine which groups differed, a t-test was used for each pair of groups. Tables 2 and 3 give summaries of the t-variates and the significance levels in those cases for which the significance level is .10 or less. The mean for the group listed at the top of the table was subtracted from the mean for the group at the left and the difference was compared using the t-test. Hence, if there is a positive significant difference the group mean on the left is significantly greater than the upper group mean. If the difference is negative, the upper group mean is significantly greater.

For example, the 4th Grade Experimental Group differed significantly from the Passive Control in one category, Fluency, at the .10 level of significance. The 4th Grade New Teacher Control Group differed significantly from all the other groups in Originality: at the .10 level for the Experimental Group, at the .01 level for the Active Control (both are shown by negative numbers in the second column) and at the .025 level

TABLE 1.
Analysis of Variance Summary

<i>Groups Compared</i>	<i>Category</i>	<i>F Ratio</i>	<i>Significance Level</i>
4th Grade	Fluency	2.4	.100
	Flexibility	2.7	.050
	Originality	3.5	.025
5th Grade	Fluency	3.5	.025
	Flexibility	2.4	.100
	Originality	8.5	.001

for the Passive Control (shown by a positive number in the third column).

TABLE 2.
t-Variates for Pairwise Comparisons (4th Grade)

		<i>Active Control</i>	<i>New Teacher Control</i>	<i>Passive Control</i>
EXPERIMENTAL	Fluency	-0.012	2.194 (.025)*	1.376 (.10)
	Flexibility	-0.889	2.051 (.025)	0.996
	Originality	1.402 (.10)	-1.405 (.10)	1.234
ACTIVE CONTROL	Fluency		1.867 (.05)	1.136
	Flexibility		2.511 (.01)	1.530 (.10)
	Originality		-2.501 (.01)	-0.157
NEW TEACHER CONTROL	Fluency			-0.934
	Flexibility			-0.719
	Originality			2.332 (.025)

* Significance Level

TABLE 3.
t-Variates for Pairwise Comparisons (5th Grade)

		<i>Active Control</i>	<i>New Teacher Control</i>	<i>Passive Control</i>
EXPERIMENTAL	Fluency	0.764	0.363	2.614 (.01)
	Flexibility	0.859	0.593	2.243 (.025)
	Originality	-1.111	-2.088 (.025)	2.301 (.02)
ACTIVE CONTROL	Fluency		-0.672	1.770 (.10)
	Flexibility		-0.565	1.157
	Originality		-0.554	3.152 (.005)
NEW TEACHER CONTROL	Fluency			3.323 (.001)
	Flexibility			2.303 (.025)
	Originality			4.881 (.001)

To test Hypothesis 2, the changes in student preferences for social studies was determined from the Before and After subject preference

tests. The summary of these rankings is given in Table 4. Second, the number of students who gave a higher or lower ranking to social studies (comparing the Before rank with the After rank) was determined. These numbers are given in Table 5. In nenther case did we find any differences between the Experimental and Passive Control Groups.

As a test of Hpothesis 3, the proportion of students who clas-sified social studies as a hard subject before the experiment was compared with the proportion who classified it as a hard subject after the experiment. A normal approximation was used to compare the frequencies* (Brownless, K. A., 1960, pp. 121-23) and it was found that no significant changes occurred. The numbers of students classify-ing social studies as hard and easy are given in Table 6. The standard-ized normal variates for the tests of differences between the Before and After proportions are also given in the table. None of the dif-ferences were significant at the .10 level.

Hypothesis 4 was tested by comparing class responses to the free-response post test given to all classes. Six criteria for a good general statement were determined and the number of criteria given by each student was tabulated. Figure 1 is an example of the criteria and student. The total number of criteria given by the class was divided by the maximum class score possible (6 times the number of students in the class). The percentages of criteria given by the classes are summarized in Table 7.

TABLE 4.
Mean Ranking of Social Studies

<i>4th GRADE</i>	<i>BEFORE</i>	<i>AFTER</i>
Experimental	6.3	5.2
Active Control	8.4	7.4
New Teacher Control	8.9	7.8
Passive Control	7.7	7.6
<i>5th GRADE</i>		
Experimental	4.6	4.6
Active Control	6.0	5.0
New Teacher Control	7.3	7.3
Passive Control	7.9	8.3

Categories for Children’s Statements

- Based on Facts:
What kind of animals live there?
- Relevance:
That it sticks to the subject.

Accurate:

Which one was true?

Broad:

Which one told more about it?

Dynamic:

Which sentence is more up-to-date than the other one?

Good Structure:

I would look to see if you used correct English.

TABLE 5.

Changes in Social Studies Ranking

	<i>Number of Students Who Gave Social Studies:</i>		
	<i>Same Rank Before & After</i>	<i>Lower Rank After</i>	<i>Higher Rank After</i>
4th GRADE			
Experimental	4 (15%)	11 (41%)	12 (44%)
Passive Control	5 (25%)	7 (35%)	8 (40%)
5th GRADE			
Experimental	4 (15%)	11 (42.5%)	11 (42.5%)
Passive Control	7 (28%)	9 (36%)	9 (36%)

TABLE 6.

*Comparison of Proportions of Students
Who Classified Social Studies as Hard*

<i>Number of Students Classifying Social Studies As:</i>				<i>Normalized Variate</i>
4th GRADE		<i>Hard</i>	<i>Easy</i>	
Experimental:	Before	3	29	-0.557
	After	3	26	
Active Control:	Before	13	15	1.104
	After	8	20	
New Teacher Control:	Before	12	20	.986
	After	6	21	
Passive Control:	Before	7	13	0.444
	After	5	16	
5th GRADE				
Experimental:	Before	5	24	-0.409
	After	5	23	
Active Control:	Before	4	19	-.0277
	After	3	16	
New Teacher Control:	Before	8	18	-0.581
	After	10	19	
Passive Control:	Before	15	11	-0.565
	After	16	10	

TABLE 7.

Percentage of Criteria for a Good General Statement

<i>4th Grade</i>	<i>Percentage of Criteria Given by Group</i>
Experimental	.38
Active Control	.22
New Teacher Control	.25
Passive Control	.26
<i>5th Grade</i>	
Experimental	.38
Active Control	.38
New Teacher Control	.30
Passive Control	.27

Conclusions

The analysis of the research findings does not indicate strong support for any of the hypotheses. For Hypothesis 1 the Experimental Groups differed significantly from the Active Control Groups in only one category, Originality, in the 4th Grade. However, differences between the Experimental Groups and the Passive Control Groups were much more pronounced. In the other hypotheses the trend was in the direction indicated by the hypotheses but significant differences were not found.

An important result of the experiment was the interest shown in the Experimental Technique by teachers at other grade levels, and their desire to adopt the method in their classrooms. They generally found it to be superior to the Standard Technique, and felt that there was probably some benefit from pupil involvement that the experiment had not measured. This, of course, is a distinct possibility.

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Suggestions for Group Presentation Techniques in Social Studies and Science

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Educators speak glowingly of group techniques, and the terms *teaming*, *partnering*, and *pairing* are glibly used. The truth is, however, that children involved in a particular aspect of research concomitant to a broader theme or a particular unit in social studies or science often are not aware of definite techniques that make their oral group presentations more effective as well as more interesting.

A commonly used method is to have a group of three or more boys and girls read orally (expertly or inexpertly), excerpts of related material from selected textbooks, encyclopedias, and other informative literature. This feat is performed during a period of from fifteen to forty minutes, depending upon the amount of research discovered by the student, the number of group participants, and the interest evidenced by the audience as well as by those presenting.

Rarely is audience participation encouraged although *Comments* or *Questions* are sometimes requested perfunctorily by the group members following the presentations. It is not uncommon to have time limits placed upon group presentations wherein the teacher or pupil-chairman interrupts or warns the students that time allotments are about to be terminated. This may represent an excellent time-control technique, if it is handled correctly, since children often will forget time-elements in their eagerness to present voluminous material. Four minute *egg-timers* serve this purpose admirably!

Although it is possible that members of the class audience may indicate by their attitudes and behaviors that they are or are not interested in the presentation occurring, too often these indications are ignored. This is analogous to some course lectures, meetings or even

conversations in which adults have had no opportunity to participate in discussions, to venture opinions or to display interest and desire for articulation. This engenders a "turning off" of communication which is commonplace not only in systems involving education and politics but in positions implicating large and small clusters of peoples and powers.

In behalf of candle-lighting instead of darkness-cursing, the following suggestions are offered as preventatives for turning off and tuning out.

1. A systematic training sequence that provides for more direct child involvement and more stimulating results.
2. Listing on the chalkboard all the ideas that the children can suggest about a good presentation. Check after the presentations to determine if the suggestions have been considered.
3. Providing for a variety of responses by asking questions about different persons involved in the presentation. For example, "Are there any other people who would like to become involved in this presentation?" or "Are there other people or sources of information that we need to consider besides those children that are presenting the information?"
4. Obtaining samples of many children's thinking which may represent suggestions that could apply to (a) groups preparing for a presentation, (b) one person presenting, (c) the listening audience and (d) the responding audience.

Some typical anticipated comments from boys and girls include the following:

1. Be brief. We don't want to listen for long periods of time.
2. Use large pictures or other types of illustrations to make your talk more interesting.
3. Interest your audience. Just don't *read* all the time.
4. In commenting, use statements that are about the subject being presented. Don't leave the subject.
5. Try to separate fact from opinion. Just because you read something from a newspaper doesn't always make it true.
6. Speak clearly.
7. Stand straight when you talk. We hate to listen to a slouchy speaker.
8. Raise questions in a kind way. We have a right to our opinions, too.
9. Organize your report. Be sure to summarize the whole thing.

Many more suggestions may be added to this listing, and ideas that

deal with a number of different aspects of a presentation may certainly be solicited.

Once the list of suggestions is complete, place the students in groups. The number of groups and the number in the groups will depend upon both age level and upon the psychological make-up of a given classroom. For younger children, two broad categories are suggested, e.g., *People Who Talk* and *People Who Listen*. For more sophisticated children, different categories may be used. It is wise to encourage children to make a list of the ideas that apply to their particular category heading. Once the children have made such a list, they should decide upon the two or three most important items for the listening audience. This is necessary because a person can remember only a few points, and not a long list of items when he is involved in an audience situation.

When presentations have been completed, it is advantageous for the children to gather in groups again and evaluate their performance in each role respectively. A careful evaluation of the performance of each group in its own role as well as an appraisal of the performance of the other groups in their roles is suggested. A collection of suggestions for presentation improvements may well be used to culminate this training that has dealt with process as content.

Effective group presentations in science and social studies represent skills that must be taught. Although some groups and some individuals inevitably produce superior presentations, all groups and all individuals will improve in this respect if their teachers will indicate the ways in which this may be done effectively.

The Brunswick Program

A Multi Media Approach to Social Studies

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Introduction

During the past several years a large number of grants from the U. S. Office of Education have been allocated for the improvement of Social Studies in the public school systems. There has been considerable range in the size of the grants—in terms of years of appropriation, number of dollars allocated, and size of population presumably effected. One common factor exists in the acceptance and utilization of federal funds, however, and that is the obligation to evaluate the success of the proposed program. With the earliest grant completions, evaluation was weak, sometimes almost non-existent. The USOE began to require more specific suggestions for evaluation in the grant proposals before the money was doled out. While this idea seemed to be a good one, and school systems did suggest certain evaluative steps; it did not solve the problem of the evaluation of a complex, multi-faceted project. Many proposals suggested the examination of a product or two that the program produced. This was an improvement, but a more comprehensive evaluation of the variables involved in a program's growth seems in order. The following report is an attempt to evaluate a specific USOE Grant along several dimensions. Perhaps this technique or some adaptation of its may prove useful to other persons involved in the evaluation of federal grants.

The Brunswick Program: A Multi Media Approach to Social Studies

The Title III Social Studies Project in Brunswick, Maine, was designed to serve the educational needs of elementary students in the state by providing a demonstration center for an inductive, problem solving, multi-media approach to Social Studies. The project followed a Title II Model Library grant and built on it by making extensive use of the materials in the library. The intention was to incorporate the outstanding facets of recent curriculum projects in a

program that would be relevant for the children of Maine, and to implement program suggestions with multi-media and multi-book resources.

From the outset of the program, the cooperation and assistance of central office administrators, principals, librarians, media specialists and grade level coordinators was outstanding. In addition to this, the dedication and creativity of the teachers generated a "head of steam" that has produced a successful and interesting program that should have a continuing influence in the State of Maine.

It is difficult to evaluate a complex program because there are numerous facets and a number of variables to consider. However, systematic evaluation is necessary, and a design by Stufflebeam and Worthen (1968) has been used as a guide for taking a more objective look at the Brunswick, Maine, Social Studies Program. Because the project is in its third year of operation, each of the categories reflects three divisions of evaluation; one for each of the three years of operation. In the project description an adaptation of the Stufflebeam and Worthen (1968) model is used, and their statements of objectives dealing with each category are paraphrased.

CONTEXT EVALUATION

To identify needs in context and identify problems underlying these needs.

Year 1

At the inception of the Social Studies project the teachers and the author drew up the following list of needed improvements:

1. Need for more *pupil involvement*.
2. Need for training in the use of *new, more effective teaching techniques*.
3. Need for suggestions and assistance in the *use of multi-media and the model library resources*.
4. Need for *program rationale* providing scope and sequence Grades 1-8.

The problems underlying these needs were not easily delineated, perhaps because the needs were so broadly defined. The teachers felt a vague dissatisfaction regarding the Social Studies program and their role in the current program, but they had some difficulty defining their needs. For example, even though the teachers did not know the newer techniques that were available, they were reasonably

sure that there must be better teaching strategies than the single text approach they were using.

Year 2

At the beginning of the second year of operation the objectives were more refined, and the teachers more aware of their role in meeting these objectives:

1. To further increase interest, motivation and achievement in Social Studies.
2. To help children grow in understanding their social role.
3. To serve as a demonstration center for Social Studies.
4. To develop techniques for teacher production of materials.
5. To develop a trained corps of teachers for the purpose of carrying out research in Social Studies.
6. To produce materials for state distribution.

These previously listed objectives were the refined objectives that teachers developed following a year of intensive training in Social Studies methodology.

Year 3

The third year objectives seem to reflect the teachers desires to make the gains of the past two years more permanent. The objectives became rather specific.

1. To evaluate via a specific research design the kinds of differences in learning that multo-media produces.
2. To complete a curriculum guide from the materials and ideas that have been developed.
3. To produce more permanent kinds of materials for teacher training and sharing—use of video tapes was recommended and specific sequences of classroom videos suggested.
4. To broaden the base for dissemination of materials and demonstration lessons.
5. To complete evaluation of the program from several angles—children, teachers, parents, administration.

The objectives were not all developed before the program started, but rather were developed each year as needs presented themselves. The sections that follow dealing with Input, Process and Product Evaluation give some indication of the steps that were taken to meet these needs.

INPUT EVALUATION

To assess the system capabilities

Year 1

Teacher Interview

A standard interview was conducted with each teacher in the experimental group. The interviewers were university personnel brought in especially for this task. Questions about the following categories were asked each teacher: Planning, Use of Materials, Use of Problem Solving Techniques, Content, and Group Structure in the Classroom. End-of-the-year interviews were conducted by the same persons using the same categories. The responses of the teachers were recorded after each teacher left the interview. These interviews were typed and submitted to a panel of experienced teacher judges who used the scoring system shown in the summary of results: Figure 1, and 2. No statistical analysis of the scores was performed because of the small sample size and number of alternatives possible in a given category. However, an indication of the trend in the changes of teacher's scores was obtained by the graphical methods illustrated in Figures 1 and 2. One can readily see the need for change by observing the pre-program interviews. The post interviews indicate that a change did take place and that further development was possible.

Year 2

The second year a collection of the teachers' stated specific objectives was made and an assessment of the systems capabilities for providing these was made.

What two Things Did I Not Get From the '68-'69 Program:

- (8) — Would like to see more demonstration teaching
- (6) — Would like more planning time allowed
- (8) — Would like more teacher sharing sessions
- (6) — Needed more equipment

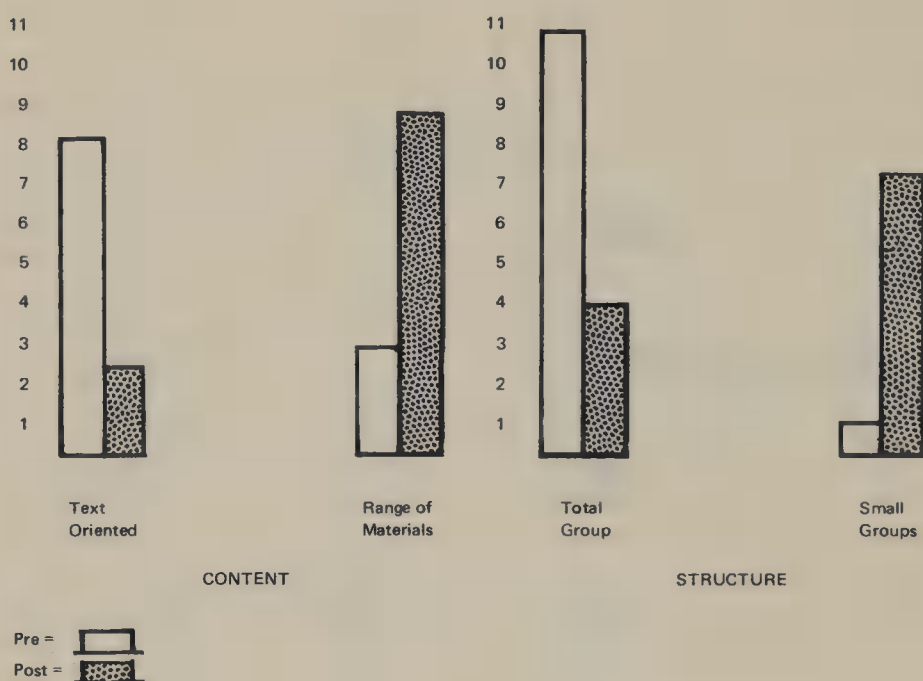
What Two Things Did the Program Provide that I Liked:

- (12) — Enthusiasm and interest
- (9) — Opportunity to work with other teachers
- (9) — Broadened ideas of Social Studies

FIGURE 1.
Teacher Interview Data



FIGURE 2.
Teacher Interview Data



What Two Things Did I Contribute to Make the Program a Success:

- (26) — Cooperation
- (11) — Positive influence for children and parents in Social Studies
- (10) — Provided initiative and action

In accordance with these statements planning sessions, work sessions and content specialists were provided as indicated in the second year Process section of their report.

Year 3

At the beginning of the third year the objectives dealt with the development of materials and videos for sharing state-wide. A survey was taken to determine the number of teachers who wished to be included in the project for purposes of producing materials, demonstrating lessons or being videod. Roughly one-third (27 teachers in 2nd year of project, 10 volunteered for these tasks) of the orgiinal group of teachers were willing to volunteer for these activities. Demonstrating and being videod were very threatening and many of the teachers were willing to participate in any way except this.

Year 1, 2, 3

A considerable library had been assembled under the Title II model Library Project and numerous films, filmstrips and equipment such as overhead projectors, tape recorders and film strip viewers were added to this. A media specialist was employed to assess and organize the variety of materials.

The specialist provided training for teachers and children in the proper utilization of materials and machines. He advised teachers about the newer materials available and their possible uses. The media specialist also consulted with teachers regarding the content areas being covered and materials available for them. A number of alternative ways of presenting materials were suggested to the teachers.

Teachers were given assistance with the production of materials and children were encouraged to use machines by themselves. As a result the children use filmstrip viewers for independent research and tape portions of discussions for classroom presentation. For example, one fifth grade group of five children gave a fascinating presentation on Plymouth Colony using nine different media. The presentation was smooth, well-planned and most interesting. It lasted fifty minutes and the children in the room were completely absorbed.

The assessment of materials and the addition of newer materials was done each year. The media specialist was retained and has given teachers assistance throughout the project.

PROCESS EVALUATION

To identify defects (or strengths?) in procedure and to maintain a record of procedure and activities.

Year 1

In an effort to meet the broad, rather basic objectives listed previously, an intensive training program was undertaken. During the first year, a total of fifteen after-school training sessions were conducted in addition to the initial one-week workshop held prior to the opening of school. The workshop was conducted by W. Lonwood Chase and the training sessions were conducted from 3:30-5:30 Monday afternoon by the author. (For a sample of specifics of the sessions see Appendix A.)

A survey was made at the end of the first year to see which sessions the teachers felt were most valuable. The following four were listed frequently:

Production Class

A single grade worked with the author and attempted to draw together ideas for a unit.

Sharing Session

Each teacher described to the entire group some interesting and unusual technique she had used. (Teachers were prepared for this in advance. The author and the director of the program visited in the classrooms and asked teachers to be prepared to speak to the group about some particularly fascinating portion of their lesson.)

Demonstrations

Children participated in these sessions and both the sessions by teachers and the author were highly favored.

Media Production

Two media specialists worked with the teachers in preparing materials—for overhead projector, opaque projector or other use in the classroom.

Year 2

In the second year of the project, experts in content areas, such as anthropology and economics and geography have been brought in to provide information and suggestions in the building of units of work. The training schedule has been approximately the same including a summer workshop conducted by the author, but the number of teachers involved has more than doubled since K-3 grade teachers, as well as 7th and 8th grade teachers have been added to the experimental group.

Special work sessions were scheduled and separate grade level help provided for the production of units of work.

Year 3

During the third year of work surrounding community school districts received invitations to come on certain specified dates for demonstrations by the teachers who volunteered for this phase of the project. A number of groups have accepted the invitation. Videos were planned dealing with special lessons and a sequence of videos taken dealing with some of the lessons described in Product Evaluation that follows.

Units of work at each grade level were completed and a curriculum guide developed for new teachers and for sharing throughout the state.

Teachers also participated in presenting a program at the New England Educational Research Organization, at the National Council

of Social Studies and at the New England Council of Social Studies. These programs dealt with the new ideas and materials developed by the teachers for use in the classroom.

PRODUCT EVALUATION

To relate outcome information to objectives and to decide to continue, modify or refocus.

Year 1

The objectives suggested a need for more pupil involvement, newer teaching techniques, greater use of media and library.

The following lesson observed by the author and conducted by Donna LaPierre with a 4th grade class should serve as an example of a lesson that meets several of these objectives at one time.

Generalizing Technique

1. The teacher used the opaque projector and with pictures she had collected reviewed some of the basic areas the children had researched. No comment was used with the pictures.
2. The teacher placed headings on the board (e.g. homes, transportation) that involved the major areas of research. The technique used in this portion of the lesson is as follows:
 - A. "Look at these headings and decide which is the very easiest one to talk about." "Raise your hand when you can make a nice full sentence about it." "Did someone else pick the same one?" (A number of responses are verbalized about a given category.)
 - B. "Did someone also choose a different heading that you thought was easiest?" (proceed as in 2A. Three or four categories are reviewed thus and then the instructions change.
 - C. "Listen carefully to your new instructions. I want you to look at the board and see if there are headings there that you think are too difficult to say anything about." Several responses and arguments ensue because some children think it possible to say something about them and the remaining items are reviewed.
3. The teacher called the students attention to a small clipped pad of paper on the corner of each desk. She had them write one general statement about the first category on the first slip of paper. The children read one or two statements to be sure they had the idea and then the teacher had the children do the remaining category statements, each on a separate slip of paper. (This procedure requires about 15 minutes.)
4. When a large percentage of the class finished, the teacher called for statement No. 1 to be torn off and held high. Someone collected all

-
- these statements. (The same procedure was followed with all categories.)
5. Next the chairman for the group was quickly identified and he dealt out the slips of paper to the team members. (Each group considers only one category and a sufficient number of groups are formed to deal with all categories.)
 6. The teacher told the children to read the statements he had in his hand and place the best one on top.
 7. Each child in the group read his best statement to the group and the group selected the best from this sample. The children were told at this point that if no one statement suited them, they could revise statements and suggestions for revision made by the group. (e.g. (a) You might put two statements together, (b) you might write a new one using words from a good one, etc.)
 8. Each group captain read his group's choice to the class and wrote this best statement on a large chart. Each member of the group sketched a miniature (3" x 4") manilla drawing of their interpretation of the statement. These were taped up under the generalization.
 9. A final effort to collect the statements was made. The captains lined up across the front of the room and the teacher said, "These statements are all about different things but see if you can tell me which one is the very best of all the statements. Which one tells the most about the topic it is about?" The class decided on the one they liked best and told why they liked it.

This creative generalizing process has been used as the experimental basis in a controlled research experiment this year at 4th and 5th grade level. Active control groups in the Brunswick area are using a more simplistic generalizing process and passive controls from Auburn, Maine have been tested also. The results of this research while not definitive is reported in more detail in this issue of Journal of Education.

The use of the library and media and the new techniques suggested by teachers and pupils has been so creative that a book is being produced by the teachers recording their own experiences called *Teacher Testing Techniques for Multi-Media Social Studies*. Additions to this collection of vignettes have been made each of the three years.

A rationale was suggested by the author that provides only a framework consisting of certain prime variables (e.g. time, place, and technological change) in the Social Studies, and going from specific, immediate concerns at the lower grades to more abstract, more far reaching concerns at the higher grade levels. It is a loose design that leaves the choice of the sample to the teachers and this sample

was worked out to the satisfaction of each grade group and then correlated with other grades to prevent undue stress on certain topic or omission of other topics. Units have been written at this time and will be available for sharing.

Year 2

During the second year the children were encouraged to develop research diaries of the materials they covered and this technique was used at 5th and 8th grade levels. Figure 3 shows a sample page from a fifth grade diary.

Also, during the second year a system called "Child's Choice" was developed by the author for use at the 1st grade level. This was a structure designed to provide motivation for the child, to help the child become aware of research processes (i.e. that in order to do research one must narrow the field of concentration and choose among competing stimuli; and that the input of information and ideas is customarily followed by some output of the assimilated ideas); and to create a need for and an opportunity to communicate with ones peers.

Sample Page

date: May 3

"Today I looked at a film-strip on customs of Holland. I read part of Peter and the Dike."

"I still don't know nothing about why they wear wooden shoes. I will look it up tomorrow."

FIGURE 3.

The procedure for the teacher is as follows: The media specialist and librarian gathered together all the available material on Hawaii. Children were allowed to browse through a limited sample of the collection and then given a chance to suggest some particular thing they would like to know more about. The teacher gave the child the remaining materials dealing with his selected topic and he was told to study these materials. The child was then asked to prepare a picture about some thing he found interesting and to write down one thing that he would like to tell the class.

The time allotted to this task might be three or four days using short (20 to 30 min.) periods.

Before the final sharing sessions the teacher had the children discuss the things they need to remember when they are presenting their research to the whole class.

- 1) speak loudly enough for everyone to hear,
- 2) have pictures large enough for everyone to see from the front or pass them around.
- 3) be brief and say exactly what you mean.

The children were then called on to share the information they had found with the class, and answer questions about their special material.

Year 3

During the third year of the grant videos have been taken of several lesson sequences including the ones just described. In addition, another sequence has been explored. This sequence deals with Cross-Grade Instruction. To iron out the difficulties involved in such an undertaking, the seventh grade teacher and the first grade teacher sat down together and decided upon a broad basic content emphasis. They decided to study "Japan—A Changing Country". The arrangements were made for seventh grade students to come to the first grade rooms and work with small groups of children every other day—during the seventh grade Social Studies period. The class time length for seventh grade was fifty minutes every day. The added time for seventh grade was utilized for the preparation of materials and gathering information that the first grade children were curious about.

The children at both grade levels were so enthused and worked so hard on the unit that requests are already coming in to the principal for "My child to be in the room that works with first graders (or seventh graders) next year."

The seventh grade teacher reports that for the first time it was not necessary to stress originality of reports, or understanding of what was read. The first graders asked questions that required direct, knowledgeable answers and the seventh graders had every intention of being more than adequately prepared to answer their questions.

As a finale each grade prepared a presentation for the other and the session was so exciting in preparation that newspaper men came and took pictures for the local newspaper on the day of the actual presentation.

Such products while not completely measureable by achievement tests do create an interest in the whole area of Social Studies and a curiosity about this area of content. Interest and curiosity are the initial steps in the inquiry process. Perhaps most important, then, for involving children, parents, and administrators in upgrading the Social Studies content is provoking students' curiosity and interest

presenting a number of alternatives to students and a real use for the things the student learns.

If one were to collect a summarial statement of these observations into a brief paradigm of the Stufflebeam and Worthen Model it would look like Figure 4.

FIGURE 4.

<i>Content Evaluation</i>	<i>Input Evaluation</i>	<i>Process Evaluation</i>	<i>Product Evaluation</i>
1st Broad Objectives	1st Teacher Interview	1st Training in theory and Methodology Demonstrations	1st Generalizing Process Teacher Tested Techniques Book Materials
2nd Refined Objectives	2nd Independent Teacher Evaluation	2nd Work Sessions Content Specialists	2nd Research Diary First Grade Child's Choice
3rd Specific Objectives	3rd Teacher Self-Selection for Demonstration and Videoing	3rd Videos Demonstrations Participation in Local and National Meetings	3rd Seventh-First Grade Cross Grade Instruction

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APPENDIX

<i>Training Schedule</i>	<i>1st Year of the Project</i>	<i>1967-1968</i>
Aug. 28 - Sept. 1	Social Studies Workshop—W. Linwood Chase, Project Director.	

Sept. 25	Preview of new materials ordered and a review of materials already available.—W. Linwood Chase
Oct. 2	Standardized interviews with teachers.
Oct. 9	Lecture on alternative teaching strategies.
Oct. 23	Problem solving (use of J. Gallagher (1964) article on Productive Thinking)
Nov. 6	Thinking Skills (use of H. Taba (1967) materials)
Nov. 20	Role Playing—Demonstration with children (use of F. and G. Shaftel (1967) story and method)
Dec. 4	Attitude formation and role playing theory (question sequence adapted from Krathwohl's Taxonomy by author)
Dec. 11	Classroom visitation.
Jan. 7, 8	Classroom visitation.
Jan. 9	Saturday forenoon training session "Questioning Techniques" by author "Book and Non-book Material possibilities"—Gregory Phelan, Library Director
Jan. 11	Matrix for considering the elements needed in units and for evaluation of those developed.
Jan. 29	Production class—author worked with each grade level to generate ideas for units. Sharing session—interesting and/or unusual techniques observed in classroom visitation.
Feb. 12	Audiovisual utilization—suggestions made by specialist in this field. Ralph Taylor.
Feb. 25	Social Studies Activities—Balance in the curriculum.
March 12	Multi-Media Production Session—implementing some of ideas generated in Feb. 12 meeting. Conducted by Ralph Taylor and Carol Guerette.
April 8	Teacher demonstration Agnes Ford with 6th grade class.
April 22	Teacher demonstration Donna LaPierre with 4th grade class followed by current issues discussion and lecture. W. Linwood Chase.
May 6	Professional Day—Surrounding communities and Gorham State College trainees and professors were invited to visit the schools during the day. An afternoon session was chaired by W. Linwood Chase. Speeches by Gilbert Wilson and Martha John This was followed by teacher presentations to the visitors in small group sessions.
May 7	Standardized Teacher Interviews.
May 20	Evaluation techniques and teacher evaluation of the program.
